

REMARKS

In the Office Action mailed December 15, 2006, the Examiner objected to Figure 1 and the abstract. Additionally, the Examiner rejected claims 15-28 under 35 U.S.C. § 101, and claims 15, 17, and 19-24 under 35 U.S.C. § 102(e). Applicants have amended claims 15 and 25 to clarify that a measure or vector of the degradation of a laser compensates for the performance of a laser. No new matter has been added. Applicants submit that claims 15-28 are in condition for allowance and respectfully request notice to this effect.

I. Response to the Objections

The Examiner objected to Figure 1 because boxes are not labeled. However, Figure 1 is not a set of boxes, but a drawing of a typical sampled grating distributed Bragg reflector (SG-DBR). Applicants have provided a Replacement Sheet for Figure 1 that clarifies the structure of an SG-DBR.

The Examiner objected to the Abstract because it was not on a separate page. Applicants have provided a new abstract as a part of this Response.

In light of the above, Applicants respectfully request withdrawal of the objections to Figure 1 and the abstract.

II. Response to the Rejection under 35 U.S.C. § 101

The Examiner rejected claims 15-28 under 35 U.S.C. § 101 because the independent claims, claims 15 and 25, do not provide a "useful, concrete and tangible result." Claim 15 has been amended to clarify that the claimed invention provides a measure of the degradation in the laser to

compensate for the performance of the laser. Similarly, claim 25 has been amended to clarify that the claimed invention provides a vector of the degradation of the laser to compensate for the performance of the laser. Thus, both claims 15 and 25 provide the useful, concrete, and tangible result of compensating for the performance of the laser.

Claims 16-24 depend from claim 15. Claims 26-28 depend from claim 25. Accordingly, Applicants also submit claims 16-24 and 26-28 are patentable for at least the reasons described above with reference to claims 15 and 25.

In light of the above, Applicants respectfully request withdrawal of the rejections under 35 U.S.C. § 101.

III. Response to Claim Rejections under 35 U.S.C. § 102(e)

The Examiner rejected claims 15, 17, and 19-24 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication No. 2003/0026302 ("Anthon"). In amended claim 15, Applicants recite a method of measuring degradation in a tunable laser. The method includes performing a first set of initial measurements on the laser to provide a reference set of measurements corresponding to a performance of the laser when no degradation has occurred. The method further includes performing a second set of measurements on the laser where some degradation has occurred. The first and second sets of measurements are then compared so as to provide a measure the degradation in the laser, which can be used to compensate for the performance of the laser.

In contrast, Anthon describes providing a mode hop free operation of a laser. Anthon describes a laser system that employs control systems in order to avoid mode hops as the laser is

tuned. (See, e.g., Anthon, paragraph 0011.) The laser is initially calibrated to generate setpoint data. (See, e.g., Anthon, paragraph 0046.) When the laser switches to an assigned frequency, it uses this setpoint data to coarsely tune the laser and then uses the control signals to finely tune the laser to the precise destination frequency. (See, e.g., Anthon, paragraphs 0048-53.)

While Anthon does describe calibrating the laser initially by performing an initial set of measurements on the laser and obtaining a set of operating points, Anthon does not make any subsequent re-calibration when the laser has degraded. Anthon implements active locking, which inherently compares the latest (second) set of measurements to the first set of measurements. However, this comparison is not used as a measure of degradation. That is, the previously defined set points obtained from the first set of measurements is not updated and, therefore, does not account for the degradation of the laser in future switching events.

Because Anthon does not show or suggest at least effecting a comparison of the first and second set of measurements so as to provide a measure of the degradation in the laser to compensate for the performance of the laser, Anthon does not show or suggest each element of claim 15. Thus, Applicants submit that Anthon does not anticipate claim 15. Claims 17 and 19-24 depend from claim 15. Accordingly, Applicants also submit that Anthon does not anticipate claims 17 and 19-24 for at least the reasons described above with reference to claim 15.

In light of the above, Applicants respectfully request withdrawal of the rejections under 35 U.S.C. § 102(e).

CONCLUSION

In light of the above amendments and remarks, Applicants submit that the present application is in condition for allowance and respectfully request notice to this effect. The Examiner is requested to contact Applicants' representative below if any questions arise or she may be of assistance to the Examiner.

Respectfully submitted,

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